Table of Assumed Temperature Correction to Groups of R − D, 1887.

Mean Z. D. South.	Mean Temp.	Assumed Temperature Correction.	Error of Ordinary formula.	Corrected Error.	Mean Z. D. South.	Mean Temp.	Assumed Temperature Correction.	Error of Ordinary Formula.	Corrected Error.
° ′	°	″	″	″	°	°	″	″	″
−67 12	43·1	+·31	−1·13	−·82	+12·11	43·0	−·07	−·19	−·26
65 27	42·7	+·31	−0·95	−·64	19·50	46·8	−·05	+·02	−·03
63 19	42·4	+·32	+·28	+·60	24·16	46·4	−·08	−·02	−·10
62 21	46·7	+·14	−·01	+·13	27·31	45·7	−·09	+·14	+·05
59 4	45·5	+·18	+·23	+·41	31·1	45·0	−·12	+·36	+·24
55 43	50·5	00	+·23	+·23	33·28	45·0	−·13	+·39	+·26
51 41	46·8	+·12	−·27	−·15	37·38	51·2	·00	−·02	−·02
47 30	39·6	+·33	−·02	+·32	40·58	46·4	−·13	−·24	−·37
41 18	48·4	+·07	−·17	−·10	43·38	43·0	−·23	−·01	−·24
35 28	45·8	+·11	−·11	·00	46·46	51·6	+·05	+·24	+·29
30 15	45·4	+·12	−·09	+·03	49·2	45·7	−·15	−·07	−·22
25 52	48·3	+·04	+·25	+·29	52·23	51·0	00	+·05	+·05
21 26	44·3	+·10	+·12	+·22	56·23	48·2	−·08	−·41	−·49
16 12	42·8	+·06	+·55	+·61	60·48	42·1	−·33	−·66	−·99
13 13	50·9	00	+·37	+·37	62·11	61·2	+·44	−·40	·00
− 9 59	45·3	+·04	−·46	−·42	65·5	34·5	−·68	+·86	+·18
					+67·13	52·4	+·08	−·62	−·54

The results we may sum up as follows :—The effect on refraction due to humidity, if any, is exceedingly small. A correction depending on temperature, and varying as sin z, will satisfy the discordances in the observations of *Polaris*, it will get rid of an annual variation, also apparently depending on temperature, in the tabular errors of the Sun; as far as it goes it will tend to bring in greater accordance the errors derived from low southern stars when arranged in order of temperature, and it will diminish the sum of the squares of the residuals of the R — D formula. Each of these results being a link in a chain partaking of the nature of circumstantial evidence.

Results of Double-Star Measures at Windsor, New South Wales, during the Years 1886, 1887, and 1888. By John Tebbutt.

This communication comprises all the double-star results obtained here during the years 1886, 1887, and 1888. All the measures were made with the eight-inch equatorial, except those of *α Centauri*, on July 27 and August 6, 1886, which were made with the $4\frac{1}{2}$-inch instrument. The column headed "Hour Angles" contains the hour-angles between which each set of measures was taken, and the last column gives the weight assigned from a consideration of the conditions under which the observations were made. 1 denotes an unusually bad condition, and 5 an unusually good one.

No.	Star.	Observed Magnitude.	Approx. Place for beginning of Year. R.A.	Dec. S.	Date of Obs.	Position Angle.	No. of Obs.	Distance.	No. of Obs.	Mag. Power.	Hour Angles.		Weight.
			h m	° ′		°		″			h m	h m	
1	*p* Eridani	...	1 36	56 46	1887·121	232·3	10	6·89	7	170	4 0 W	5 0 W	...
2	„	6, 6	„	„	1887·131	231·4	10	6·90	8	170	5 4 W	5 40 W	3
3	„	...	„	„	1887·734	230·7	10	...	...	230	4 45 E	4 24 E	...
4	„	...	„	„	1887·734	230·7	10	...	...	300			...
5	„	6, 6	„	„	1887·747	229·5	10	6·91	10	300	3 23 E	2 52 E	...
6	„	6, 6	„	„	1887·934	228·5	10	7·27	10	230	0 52 W	1 26 W	4
7	„	6, 6	„	„	1888·038	228·1	10	6·66	10	300	3 51 W	4 24 W	4
8	Lac. 2145	...	6 2	48 27	1887·104	26·3	10	2·07	7	170	1 0 E	0 21 E	3
9	„	8, 8¼	„	„	1887·205	24·0	10	...	...	170	2 11 W	3 14 W	3
10	„	...	„	„	1887·942	22·2	10	1·84	10	300	3 16 E	2 44 E	...
11	V Puppis	6½, 8	6 36	48 7	1888·288	...	...	13·39	5	...	4 11 W	4 25 W	...
12	Lac. 2640	...	7 2	59 1	1887·134	85·1	10	2·38	7	...	1 53 E	1 19 E	3
13	„	6½, 7½	„	„	1888·288	...	...	2·51	5	130	3 10 W	3 26 W	3
14	γ Piscis Vol.	4, 6	7 10	70 19	1888·288	...	...	13·28	5	170	2 8 W	2 42 W	4
15	„	...	„	„	1888·304	299·7	10	...	...	300	0 14 W	0 45 W	2
16	γ Argûs A.B.	...	8 6	47 0	1887·356	220·3	6	41·16	5	...	3 20 W	3 40 W	4
17	„ A.B.	2, 5	„	„	1888·301	...	...	41·77	5	130			3
18	„ A.C.	2, 7½	„	„	1888·301	...	...	62·32	5	130	1 13 W	2 12 W	3
19	„ A.D.	2, 8	„	„	1888·301	...	...	92·59	5	130			3

No.	Star.	Observed Magnitude.	Approx. Place for beginning of Year. R.A.	Dec. S.	Date of Obs.	Position Angle.	No. of Obs.	Distance.	No. of Obs.	Mag. Power.	Hour Angles.		Weight.
			h m	° ′		°		″			h m	h m	
20	γ Argûs A.B.	2, 5	8 6	47 0	1888·301	220·4	5	...	...	140			3
21	„ A.C.	2, 7½	„	„	1888·301	151·2	5	...	...	140	2 12 W	3 0 W	3
22	„ A.D.	2, 8	„	„	1888·301	141·6	5	...	...	140			3
23	*h* 4087	8, 8¼	8 18	40 40	1887·345	298·6	10	1·85	5	170	3 33 W	5 14 W	3
24	„	...	„	„	1887·350	300·8	10	...	...	170	3 3 W	3 35 W	4
25	Lac. 3366	6, 9	8 26	44 21	1887·134	348·0	10	4·51	8	...	2 28 E	1 36 E	3
26	*h* 4306	7, 7	10 16	64 7	1887·134	138·4	10	1·89	3	...	2 54 E	2 19 E	3
27	Σ 1500	8½, 8¾	10 54	2 55	1887·131	311·7	10	1·71	5	170	3 1 E	2 20 E	3
28	*h* 4432	7, 8½	11 19	64 20	1888·320	298·6	10	...	...	300	1 20 E	1 1 E	4
29	„	8, 9	„	„	1888·323	...	...	2·23	8	170	2 12 E	1 55 E	4
30	*h* 4507	9, 10	12 8	44 16	1888·320	222·6	10	...	...	140	2 43 E	2 30 E	4
31	„	9, 10	„	„	1888·323	...	...	16·47	7	170	2 32 E	2 2 E	4
32	„	8, 9	„	„	1888·342	223·3	10	...	...	140	0 55 E	0 20 E	...
33	α Crucis	...	12 20	62 28	1887·104	115·8	10	5·19	6	170	3 52 E	3 27 E	3
34	„	1½, 1½	12 20	62 29	1888·320	120·4	10	...	...	230	1 49 E	1 26 E	4
35	„	...	„	„	1888·323	...	...	4·73	10	170	5 29 E	5 4 E	4
36	Lac. 5147	...	12 20	62 29	1888·323	...	...	89·96	5	170	4 53 E	4 38 E	4
37	„	1½, 5	„	„	1888·320	202·0	10	...	...	230	...	...	4
38	„	...	„	„	1888·323	...	...	89·87	5	170	4 38 E	4 26 E	4

No.	Star.	Observed Magnitude.	Approx. Place for beginning of Year. R.A.	Dec. S.	Date of Obs.	Position Angle.	No. of Obs.	Distance.	No. of Obs.	Mag. Power.	Hour Angles.		Weight.
			h m	° ′		°		″			h m	h m	
39	δ Corvi	3½, 8	12 24	15 54	1888·208	214·9	5	24·11	5	130	3 20 E	2 45 E	3
40	γ Centauri	...	12 35	48 20	1887·580	359·6	8	...	...	300	4 24 W	4 40 W	3
41	,,	4, 4	,,	,,	1887·586	358·5	10	1·76	7	300	3 4 W	3 30 W	3
42	,,	4, 4	12 35	48 21	1888·219	0·4	10	1·56	5	170	3 41 E	3 10 E	4
43	,,	4, 4	,,	,,	1888·320	...	...	1·80	10	170	3 21 E	3 4 E	3
44	,,	...	,,	,,	1888·329	...	...	1·60	6	170	5 6 E	4 54 E	3
45	,,	...	,,	,,	1888·329	359·3	10	1·79	6	...	4 47 E	4 21 E	3
46	,,	...	,,	,,	1888·340	358·5	10	1·88	8	300	4 42 E	4 16 E	3
47	,,	...	,,	,,	1888·605	...	...	2·73	8	130	4 16 W	4 30 W	2
48	,,	...	,,	,,	1888·608	359·7	10	...	...	300	5 30 W	5 44 W	3
49	γ Virginis	4, 4	12 36	0 50	1887·386	155·5	10	5·61	10	300	1 49 E	1 10 E	3
50	,,	4, 4	,,	,,	1887·386	155·5	10	5·69	10	300	1 7 W	1 55 W	2
51	,,	...	,,	,,	1888·329	156·4	10	5·68	8	300	1 15 E	0 33 E	3
52	,,	...	,,	,,	1888·635	153·3	10	5·86	8	300	2 40 W	3 15 W	4
53	β Muscæ	4, 4	12 39	67 30	1888·334	329·4	12	1·33	8	300	2 55 E	2 51 E	3
54	,,	...	,,	,,	1888·340	329·2	10	1·18	5	...	2 47 E	2 19 E	3
55	Sydney$_2$, 213	8, 8	13 1	59 16	1888·334	26·1	10	0 7	...	300	2 11 E	1 59 E	3
56	Lac. 5632	7, 8½	13 35	53 59	1888·326	...	...	5·21	10	170	2 53 E	2 30 E	5
57	,,	...	,,	,,	1888·329	163·6	10	5·23	5	300	3 23 E	2 48 E	4, 1

No.	Star.	Observed Magnitude.	Approx. Place for beginning of Year. R.A. h m	Dec. S. ° ′	Date of Obs.	Position Angle. °	No. of Obs.	Distance. ″	No. of Obs.	Mag. Power.	Hour Angles. h m	h m	Weight.
58	Sydney$_1$, 411	...	13 41	61 33	1888·323	...	...	12·27	8	170	2 50 E	2 12 E	4
59	*h* 4634	8½, 10	13 50	55 29	1888·326	...	...	12·19	10	170	3 55 E	3 28 E	4
60	„	8½, 10	„	„	1888·329	16·6	10	12·29	10	{230 / 140}	4 47 E	4 2 E	4
61	„	8½, 9½	„	„	1888·340	13·7	10	12·65	6	140	3 9 E	2 38 E	4
62	„	...	„	„	1888·364	16·0	12	12·29	6	140	2 49 E	2 18 E	...
63	„	...	„	„	1888·605	...	...	12·68	7	130	3 56 W	4 18 W	4
64	„	8, 9	„	„	1888·608	14·4	10	12·27	5	140	3 24 W	3 54 W	3
65	*h* 4630	8½, 8½	13 51	65 5	1888·342	314·1	10	4·18	7	{230 / 140}	3 43 E	3 14 E	...
66	*α* Centauri	1, 3	14 32	60 22	1886·567	200·8	10	15·30	10	...	1 23 E	0 48 E	4
67	„	1, 3	„	„	1886·567	202·9	10	15·48	10	...	0 33 W	1 5 W	3
68	„	1, 3	„	„	1886·594	199·9	10	14·84	10	180	2 18 E	1 46 E	3
69	„	1, 3	„	„	1886·594	203·8	10	15·22	10	180	...	1 47 W	3
70	„	...	„	„	1886·613	201·4	8	15·08	8	170	...	...	3
71	„	...	„	„	1886 613	202·0	5	15·65	5	170	...	1 48 W	1
72	„	...	„	„	1886·627	202·1	9	15·13	9	170	1 57 W	2 35 W	2
73	„	...	„	„	1886·646	201·2	5	14·90	5	170	5 52 W	6 21 W	2
74	„	...	„	„	1887·326	201·9	10	15·98	6	170	2 45 E	1 59 E	5
75	„	1, 2	„	„	1887·345	201·4	10	16·05	6	170	0 34 E	0 6 W	3
76	„	1, 2	„	„	1887·356	202·4	10	15·87	10	300	1 37 E	1 10 E	3
77	„	1, 2	„	„	1887·356	203·4	10	16·06	10	300	1 5 W	1 39 W	3

No.	Star.	Observed Magnitude.	Approx. Place for beginning of Year. R.A. h m	Dec. S. ° ′	Date of Obs.	Position Angle. °	No. of Obs.	Distance.	No. of Obs.	Mag. Power.	Hour Angles. h m	h m	Weight.
78	α Centauri	...	14 32	60 22	1887·479	202·3	10	...	...	300	1 13 W	1 27 W	4
79	,,	...	,,	,,	1887·482	...	...	16·35	10	300	0 6 W	0 35 W	3
80	,,	...	,,	,,	1887·575	202·1	10	16·36	7	230	3 34 W	4 0 W	2
81	,,	...	,,	,,	1887·597	202·0	8	...	...	230	1 38 E	1 24 E	...
82	,,	...	,,	,,	1887·597	202·4	10	16·20	10	230	1 1 E	0 36 E	...
83	,,	...	,,	,,	1887·646	202·9	10	...	...	300	0 34 E	0 22 E	4
84	,,	1, 2	,,	,,	1887·712	201·2	10	16·01	10	230	4 5 E	3 19 E	3
85	,,	1, 2	,,	,,	1887·712	202·4	10	16·10	10	230	0 7 W	0 47 W	4
86	,,	...	,,	,,	1887·712	203·1	10	16·11	10	230	4 50 W	5 29 W	4
87	,,	...	,,	,,	1887·734	202·5	10	16·42	10	230	4 30 E	3 55 E	3
88	,,	...	,,	,,	1887·734	201·7	10	...	...	230	2 52 E	2 41 E	3
89	,,	...	,,	,,	1887·734	202·6	10	16·28	10	230	0 13 W	0 54 W	3
90	,,	...	,,	,,	1887·734	201·6	12	...	...	230	2 38 W	2 55 W	3
91	,,	1, 3	,,	,,	1888·219	204·4	10	16·89	6	170	4 55 E	4 23 E	3
92	,,	...	,,	,,	1888·320	203·3	10	...	...	...	3 28 E	3 12 E	4
93	,,	...	,,	,,	1888·323	...	...	16·97	8	170	4 8 E	...	3
94	,,	1, 1½	,,	,,	1888·340	202·8	10	16·74	5	300	3 14 E	2 51 E	2
95	,,	...	,,	,,	1888·633	...	...	17·13	5	300	4 0 E	3 20 E	...
96	,,	...	,,	,,	1888·633	203·1	7	...	...	300	3 10 E	3 2 E	3
97	,,	...	,,	,,	1888·633	203·0	10	16 92	8	300	0 36 E	0 5 E	3
98	,,	...	,,	,,	1888·633	202·7	10	17·32	8	300	3 16 W	3 44 W	2

No.	Star.	Observed Magnitude.	Approx. Place for beginning of Year. R.A.	Dec. S.	Date of Obs.	Position Angle.	No. of Obs.	Distance.	No. of Obs.	Mag. Power.	Hour Angles.		Weight.
			h m	° ′		°		″			h m	h m	
99	π Lupi	...	14 58	46 37	1888·654	86·3	10	1·50	5	300	3 33 W	3 58 W	3
100	Lac. 6477	7, 7	15 38	65 5	1887·356	153·4	10	2·36	8	300	1 46 E	1 21 E	3
101	,,	7, 7	,,	,,	1887·706	154·2	10	2·44	6	300	3 36 W	4 10 W	3
102	,,	7, 7	,,	,,	1888·652	148·2	10	2·19	1	300	1 22 W	1 46 W	2
103	,,	7, 7	,,	,,	1888·652	148·2	10	...	...	300	1 46 W	1 56 W	4
104	,,	7, 7	,,	,,	1888·654	150·5	10	2·37	5	300	2 24 W	2 44 W	3
105	ξ Lupi	6, 6½	15 50	33 38	1887·356	50·0	10	10·69	8	300	1 16 E	0 37 E	4
106	,,	6, 6½	,,	,,	1887·706	48·3	10	10·51	8	300	4 9 W	4 41 W	3
107	η Lupi	5, 9	15 53	38 4	1887·706	19·9	10	15·36	7	230	4 50 W	5 18 W	3
108	β Scorpii	...	15 59	19 30	1887·575	24·2	10	13·71	10	300	1 11 W	1 57 W	3
109	,,	3, 7	,,	,,	1887·597	24·9	10	13·82	10	300	1 43 E	1 14 E	5
110	Brisb. 5784	8, 8	16 33	60 42	1888·643	115·7	10	2·98	6	140	2 38 W	3 6 W	3
111	,,	8, 8	,,	,,	1888·649	115·3	10	2·71	5	140	0 59 W	1 24 W	4
112	Sydney$_2$, 287	8, 8	16 51	58 40	1888·649	129·8	10	2·89	5	140	2 0 W	2 22 W	4
113	36 Ophiuchi	6, 6	17 8	26 26	1887·531	199·1	10	4·64	8	300	1 26 E	0 32 E	5
114	,,	...	,,	,,	1887·701	196·6	10	4·59	8	300	3 12 W	3 41 W	3
115	Lac. 7267	7, 7½	17 19	45 44	1887·695	265·3	10	2·70	8	300	4 3 W	4 29 W	5
116	*h* 5027	9, 10	18 4	54 22	1887·742	97·2	12	...	...	140	2 50 W	3 17 W	...
117	,,	9, 10	,,	,,	1887·742	97·6	12	...	...	140	3 56 W	4 22 W	...
118	,,	9, 10	,,	,,	1887·767	97·4	10	11·84	4	140	3 47 W	4 25 W	...
119	κ Cor. Aust.	6, 7	18 26	38 48	1887·695	358·7	10	21·51	10	230	2 12 W	2 44 W	5

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No.	Star.	Observed Magnitude.	Approx. Place for beginning of Year. R.A. h m	Dec. S. ° ′	Date of Obs.	Position Angle. °	No. of Obs.	Distance. ″	No. of Obs.	Mag. Power.	Hour Angles. h m	h m	Weight
120	Lac. 7924	8, 8	18 53	63 57	1887·597	292·7	10	2·10	10	300	2 15 E	1 38 E	4
121	„	8, 8	„	„	1887·709	291·7	10	2·15	5	230	1 22 W	1 44 W	4
122	Brisb. 6556	5, 5	18 53	37 13	1887·767	282·2	10	12·71	7	140	3 49 W	4 16 W	5
123	„	7, 7	„	„	1888·643	280·8	8	12·76	5	230	1 32 E	1 9 E	3
124	γ Cor. Aust.	$5\frac{1}{2}$, $5\frac{1}{2}$	18 59	37 13	1887·712	197·6	15	1·68	8	300	1 28 W	2 2 W	3
125	„	$5\frac{1}{2}$, $5\frac{1}{2}$	„	„	1887·715	197·8	15	...	...	300	0 59 W	1 35 W	3
126	„	$5\frac{1}{2}$, $5\frac{1}{2}$	„	„	1887·717	194·7	12	...	...	300	2 27 W	2 50 W	5
127	„	...	„	„	1887·767	194·7	10	...	...	300	4 16 W	4 27 W	4
128	„	...	„	„	1888·307	192·4	10	1·59	7	{300 170}	2 49 E	2 8 E	5
129	„	...	„	„	1888·633	189·6	10	1·73	5	300	3 31 E	3 9 E	4
130	„	...	„	„	1888·633	185·6	10	...	...	300	1 42 E	1 26 E	3
131	„	...	„	„	1888·638	189·4	12	...	...	300	1 40 E	1 26 E	5
132	„	6, 6	„	„	1888·643	186·8	10	1·82	7	300	2 7 E	1 47 E	3
133	„	...	„	„	1888·805	191·9	12	...	...	300	1 33 W	1 50 W	5
134	Lac. 8443	$7\frac{1}{2}$, 8	20 28	75 44	1887·586	16·0	10	17·92	10	230	2 37 E	2 6 E	3
135	Lac. 8550	7, 7	20 42	62 51	1887·643	94·7	10	2·94	8	{300 230}	1 28 E	0 48 E	4
136	Lac. 8687	$8\frac{1}{2}$, $8\frac{1}{2}$	21 2	55 2	1887·709	124·8	12	3·08	5	230	1 45 E	1 12 E	...
137	θ Indi	6, $7\frac{1}{2}$	21 12	53 55	1887·643	287·2	10	4·62	8	230	1 8 E	0 39 E	4
138	θ Gruis	5, 8	23 1	44 8	1887·717	22·1	10	2·33	8	300	3 5 E	2 34 E	5
139	h 2167	7, $7\frac{1}{2}$	23 1	51 18	1887·717	258·9	10	8·33	6	300	0 23 E	1 53 E	5

Remarks.

1. Stars exactly equal. 2. Impossible to decide which was the brighter. 5. North component the brighter.

6, 7. Components equal. 8. Components not quite equal. 10. South star the brighter. 14. Primary yellowish, companion blue. 17, 18, 19, 20, 21, 22. The distances were determined from the observed position-angles and differences of declination.

23. Distance observed with difficulty. Herschel's position-angle in 1837 = 146°·6, Hargrave's in 1879 = 308°·9.

24. Obviously a binary system. 25. Sydney measures of distance very discordant. 26. Probably identical with Stone 5639.

27. Distance difficult to observe. 30. Components very neatly defined. 31. Primary pink, companion blue.

34. Components equal. 35, 36, 38. Observations about sunset. 40, 42. Components equal.

43. Components equal, and observed without illumination. 44, 45. Observed without illumination.

46. Components equal; measures about sunset. 52. Components equal. 53. Elongated with a power of 140, just divided with 230, and well divided with 300. Components equal. 55. Components equal; distance estimated.

57. Images steady and well defined during position measures, but definition bad and images dancing during distance measures.

59, 60, 61. Primary white and companion blue. Certainly a binary. See Cape and Sydney measures.

65. The following and south component probably the brighter. 66, 68. Daylight observations.

74. Reduced to points of light by cloud, and well observed. 81, 82, 83. Observations before sunset.

84, 85. Distances determined from position-angles and differences of declination. 87, 88, 89, 90. Observed in daylight.

93. Distance determined from position-angle and difference of declination. 99. Components equal; easily divided with a power of 230, but distance difficult to determine. 101, 103. Components equal. 109. Observed in twilight.

110. A neat double; preceding component probably the brighter. Observed at Sydney as follows: 1871·604, mags. $6\frac{1}{2}$ and 7, P = 124°·1, D = 3″·80; 1880·630, mags. 10 and 10, P = 297·8, D = 2″·82. 111, 112, 113. Components equal.

114. North component slightly the brighter. 116, 117. Companion very faint. 120. The haziness which characterised this star in 1885 not now seen. In 1885 the components were equal, but now the following star is the brighter.

121. Components equal and well defined. 122. The following component perhaps the brighter. 123. Components equal.

124. Components equal, and distance observations difficult. 125, 126, 127. Components equal. 132. Components equal and hazy.

136. Components equal; distance measures difficult. 137. Companion pale blue. 138. Primary white; companion pale blue.

Private Observatory, Windsor, N. S. Wales:
1889, *September* 25.

On the Proper Motion of the Double Star South 503.

By J. E. Gore.

Assuming that the change of position in the close pair is due to uniform rectilinear motion, I have computed the following formulæ :—

$$\rho^2 = 5{\cdot}76 + 0{\cdot}4225\,(t - 1885{\cdot}75)^2$$

$$\sec(\theta - 48^\circ{\cdot}04) = 0{\cdot}4166\rho.$$

The following is a comparison between the recorded measures and the positions computed from the above formulæ. The observed position-angles have been corrected for the effect of precession to 1880·0.

Epoch.	Observer.	θ_o	θ_c	$\theta_o - \theta_c$	ρ_o	ρ_c	$\rho_o - \rho_c$
		°	°	°	″	″	″
1825·07	South	134·41	133·61	+0·80	39·94	39·57	+0·37
1873·93	Dembowski	120·13	120·69	−0·56	8·08	8·05	+0·03
1875·21	„	118·63	118·74	−0·11	7·07	7·26	−0·19
1875·88	„	117·52	117·52	0·0	6·72	6·85	−0·13
1881·18	Burnham	99·29	98·54	+0·75	3·58	3·82	−0·24
1882·16	„	92·39	91·24	+1·15	3·28	3·34	−0·06
1883·11	„	82·58	82·59	−0·01	2·90	2·95	−0·05
1887·039	Tarrant	30·36	31·09	−0·73	2·83	2·54	+0·29

The proper motion of the brighter star is, therefore, 0″·60 per annum in the direction of position-angle 138°·04.

Note on the Bright Line Spectra of R Andromedæ and R Cygni, and on the suspected Bright Lines in R Cassiopeiæ, and on the Spectrum of W Cygni. By the Rev. T. E. Espin.

On the night of September 25 the 17¼-inch was turned on *R Andromedæ*, and, although the star should have been at its maximum at the end of July, it was found to have a magnitude of about 6·5. On examining the spectrum the F line was found immediately to be bright. The brightness of this line was so extraordinary that it appeared to extend outside the spectrum. Another bright line, presumably D_3, was also observed, and near this place the spectrum seemed to consist of several very fine bright lines. The spectrum had the usual prominent bands of the third type, but far in the violet glimpses were caught of a very large and obscure band. Unfortunately the sky clouded up before the spectrum could be thoroughly examined. No other chance of examining the spectrum occurred until October 17. The star had now greatly faded, and was estimated at 7·8 mag.